

ROTTLER

THE CUTTING EDGE

F69A CNC MACHINING CENTER

OPTIONAL EQUIPMENT CATALOG



ORDERING PROCEDURE

Contact your regional Rottler sales rep for assistance in ordering optional equipment, replacement parts, or tooling.

If you are unable to contact your regional Rottler sales rep, call the factory at 253-872-7050 and ask to speak to the parts sales specialist.

Have the following information handy to expedite the ordering process:

1. Your name, business name, and contact number
2. Customer number
3. If you don't have a customer number, your billing address
4. Shipping address if different from billing address
5. Machine model and serial number
6. Part number and description of what you want to order
7. Preferred method of shipment

You may also contact us via e-mail with the above information. Send e-mail requests to:
parts@rottermfg.com

In some cases you may be requested to send a photo of the part you are ordering if it is a replacement part, or doesn't appear in the database.

If you are unsure which part you need to order, contact our service department and ask to speak to one of our service consultants. They will assist you in determining which part you require.

THERE IS A MINIMUM ORDER OF \$25.00



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SOFTWARE PACKAGES

6758T Automatic Boring, Sleaving

Including Lower Offset for Honing Clearance, Automatic Cycle
Contact your Rottler Sales Representative or the factory for complete details.

6758U Multiple Pass Programmable Depth Of Cut

Rough and Finish Milling/Surfacing, Automatic Cycle
Contact your Rottler Sales Representative or the factory for complete details.

6773B Main Line Bore Machining

Including Circular Interpolation Thrust Facing (See Below Thrust Facing Toolholder), Automatic Cycle
Contact your Rottler Sales Representative or the factory for complete details.

650-2-20A Lifter Bore Machining

Automatic Cycle
Contact your Rottler Sales Representative or the factory for complete details.

6758Z Stroker Crankshaft Connecting Rod Clearance Software Package

Contact your Rottler Sales Representative or the factory for complete details.

650-2-44Z Block Lightening

For World Products Small Block Chevy Motown
Contact your Rottler Sales Representative or the factory for complete details.

650-2-44Y Block Lightening

For Dart Small Block Chevy Little M
Contact your Rottler Sales Representative or the factory for complete details.

650-2-45K Block lightening

For Big Block Chevy Dart - Big "M" - Software Package
Contact your Rottler Sales Representative or the factory for complete details.

650-3-45M Connecting Rod Boring Software Package

Contact your Rottler Sales Representative or the factory for complete details.

ROTTLER CAM (COMPUTER AIDED MANUFACTURING) SOFTWARE

9043 Rottler CAM (Computer Aided Manufacturing) Software Package

When Rottler CAM #9043 is purchased together with a new machine, one day of introductory training is available for purchase on the CAM software. Additional training on Rottler CAM is provided through instructional videos at www.RottlerTube.com

CYLINDER BORE CENTERING

Automatic Centering

650-3-59Y Renishaw Wireless Probing System

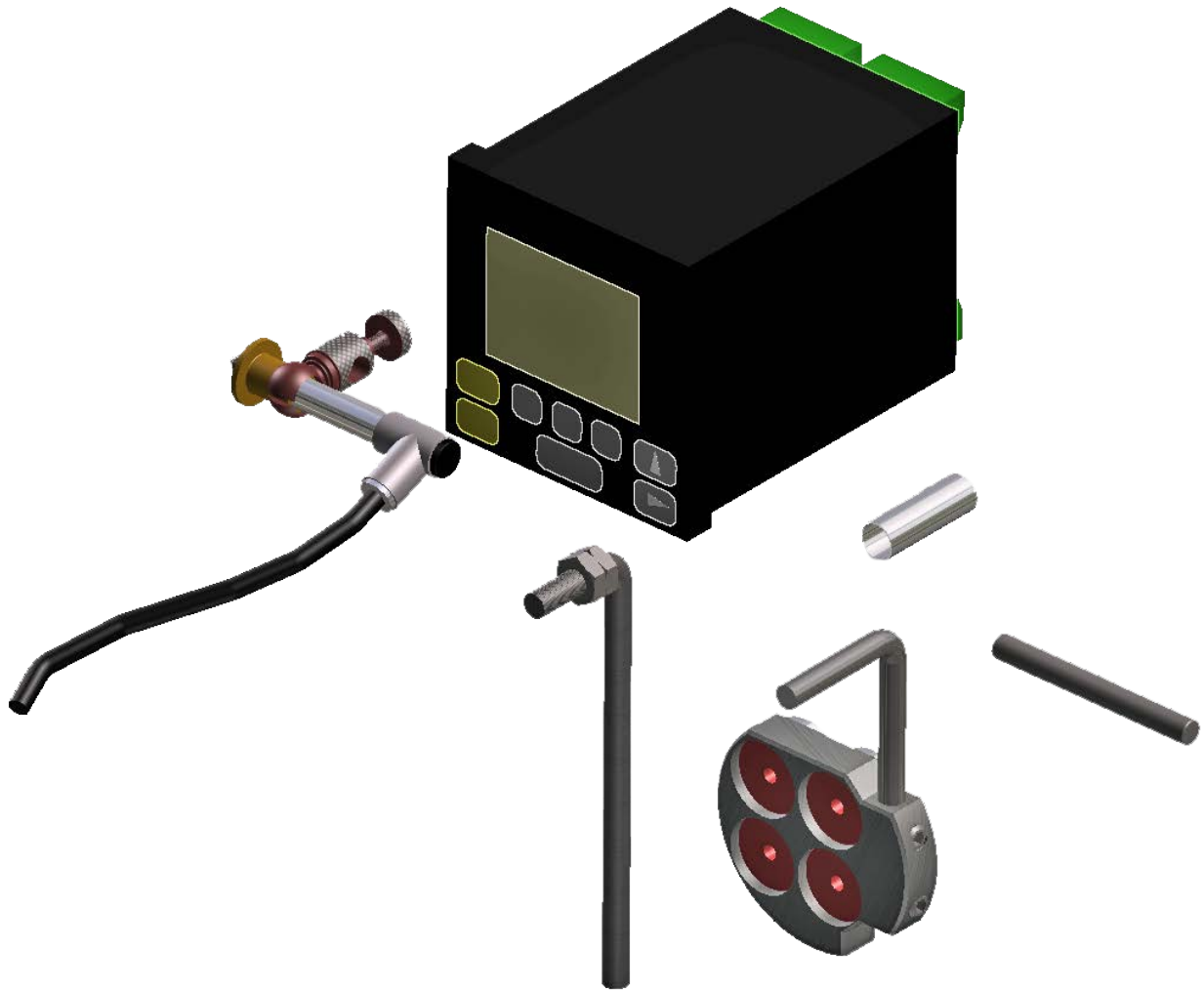
Including 6 Probes/Stylus and software. Designed to Work Together with Rottler 4th Axis Fixture System. Price Includes Factory Installation During Machine Manufacture, Extra Charge Applies.



Manual Centering

502-12-7B Digital Runout Probe and Readout

Including Magnetic Holder for Block Set Up and Manual Centering of Cylinder Bores and Main Line Bores

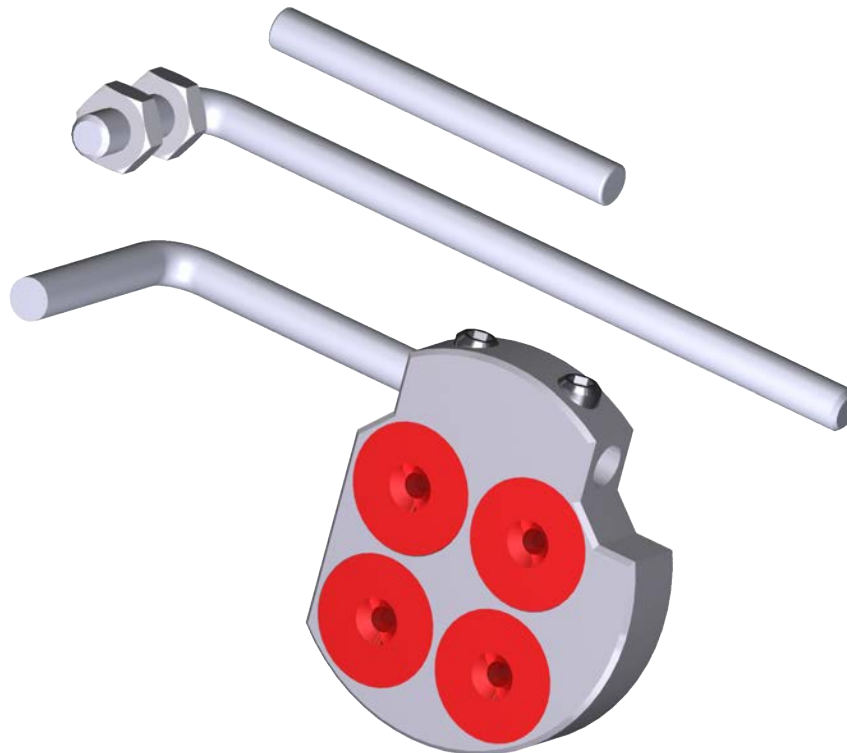


502-9-9A Mechanical run out indicator

General purpose (.001) resolution

**502-12-4 Magnetic base**

With (2) extension arms for indicators (4) magnet base for cylinder boring bar



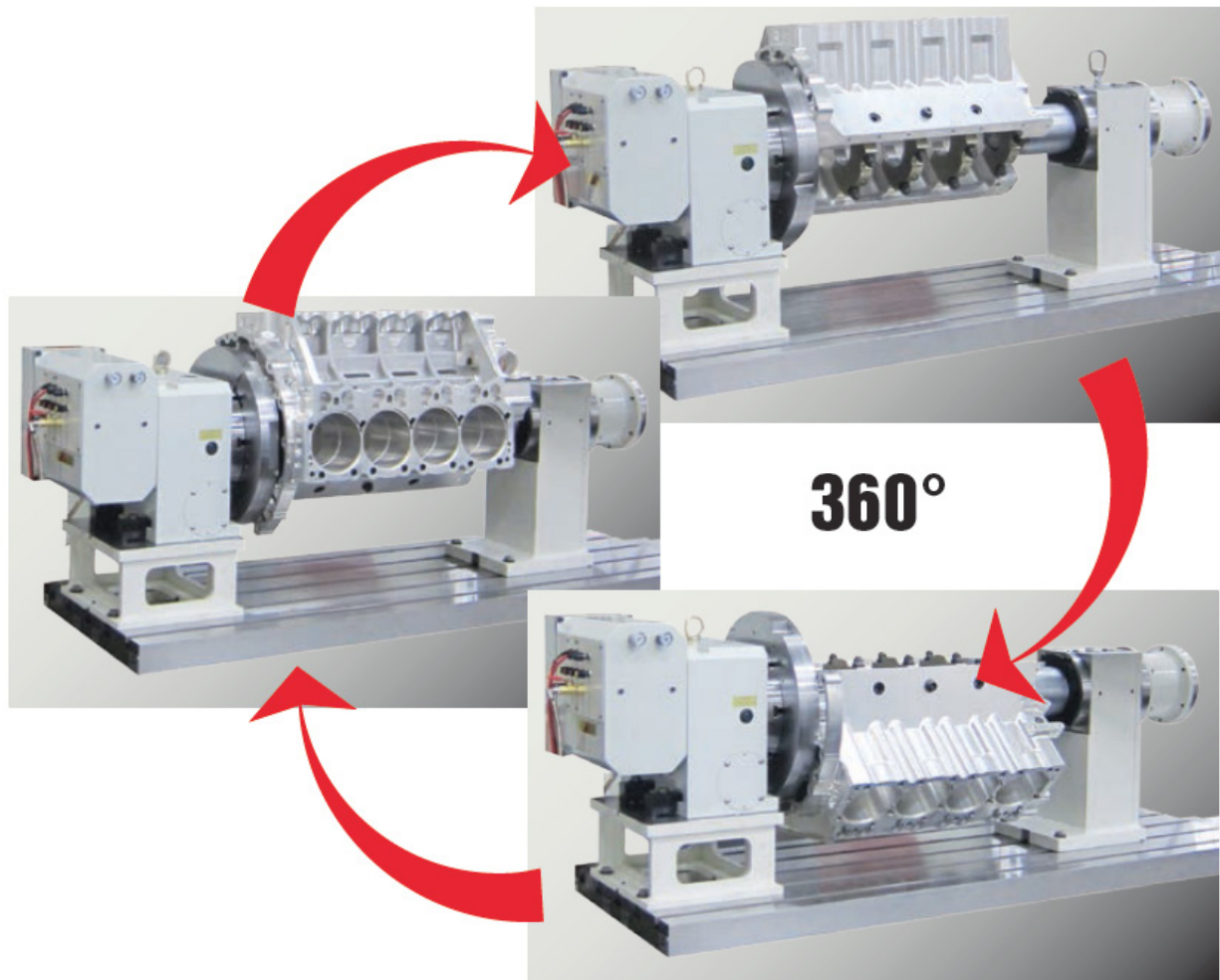
BLOCK FIXTURING

Automatic

690-3-63 Computer Controlled Automatic 4Th Axis Block Roll Over Fixture

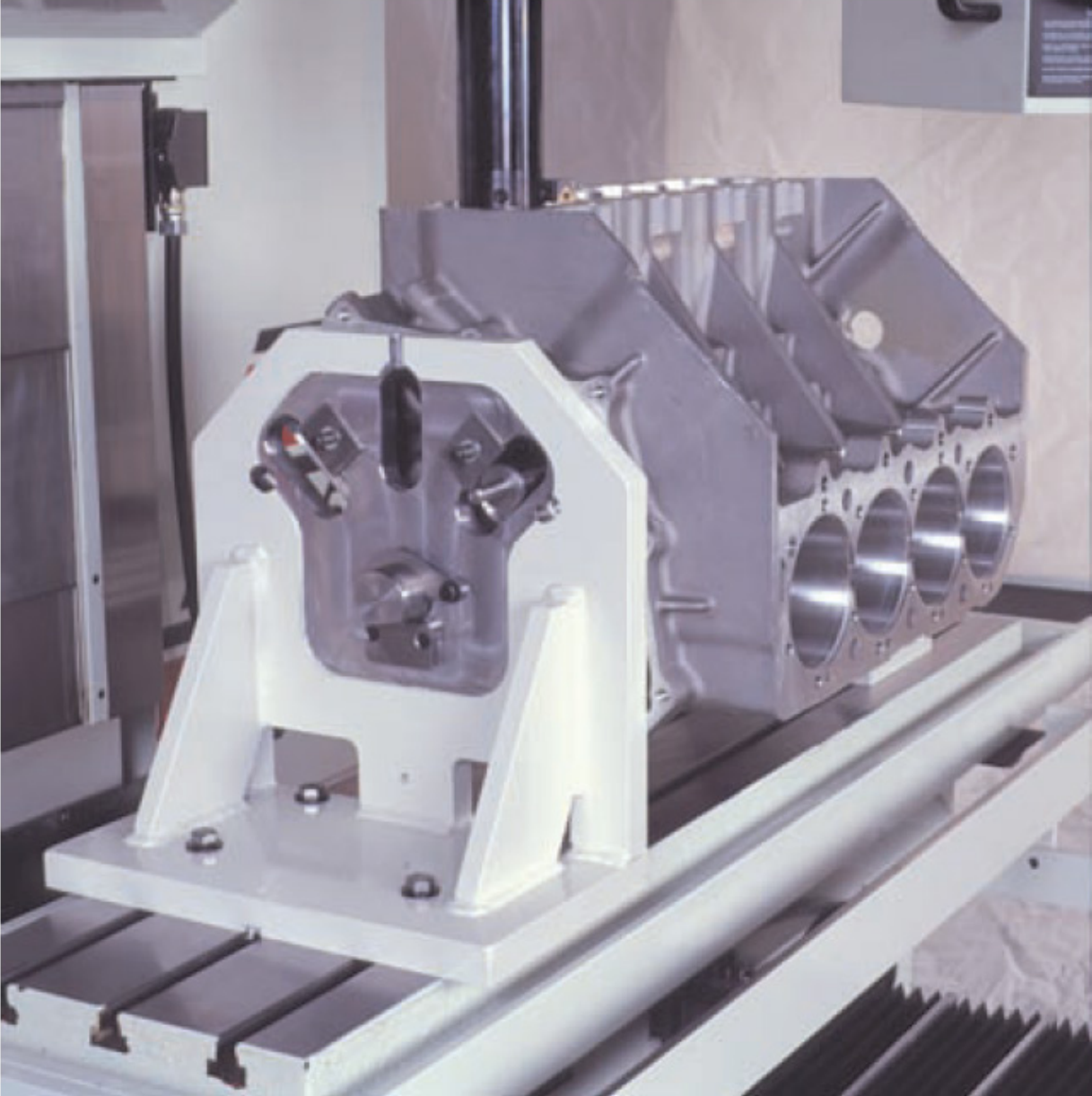
Including:

- 1: Rottler 4th Axis Software Packages.
- 2: Universal Engine Block Mounting System to Locate and Hold A Wide Variety of Camshaft Type V Blocks, Requires Main and Cam Bearing Locators to Precision Mount Blocks.
- 3: Adjustable Camshaft Centerline Locating Device to Set Up Camshaft Type V Blocks with Reference to the Centerline of their Camshaft and Crankshaft.
- 4: Power Tail Stock for Quick Mounting of Blocks and Rigid Support During Machining.



Manual**650-3-1 Performance 90 Degree V Block Fixture**

Heavy Duty, Including Crankshaft and Camshaft Bars to Accommodate Max. Block Length of 23.85" (606mm). Customer Must Order Main and Cam Locators Required from List Below. Fixture Price Does not Include Locators



Optional Performance Fixture Crankshaft and Camshaft Bars for Longer Block Models**650-3-4E Crankshaft Bar for Longer Block Models**

V10. Maximum Block Length 31.85" (809mm)

**650-3-7K Camshaft Bar for Longer Block Models**

V10. Maximum Block Length 31.85" (809mm)

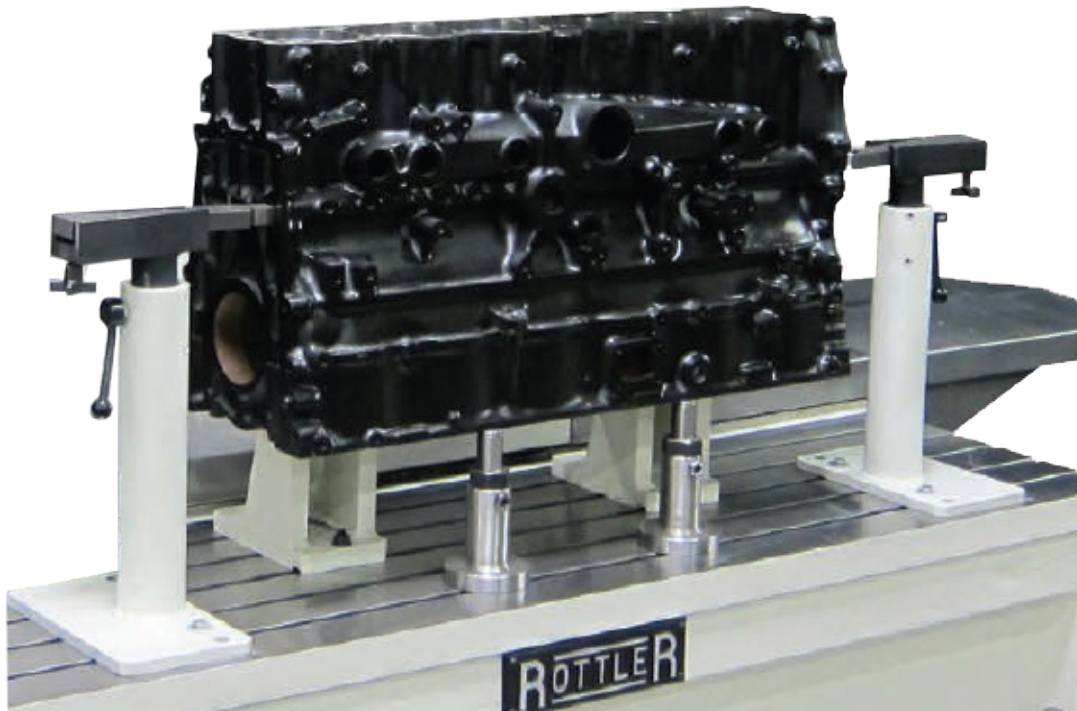
**650-3-4F Spacer Set for Honda, Subaru, Mitsubishi Blocks**

For Boring and Milling/Surfacing with the 650-3-1 Performance Fixture.



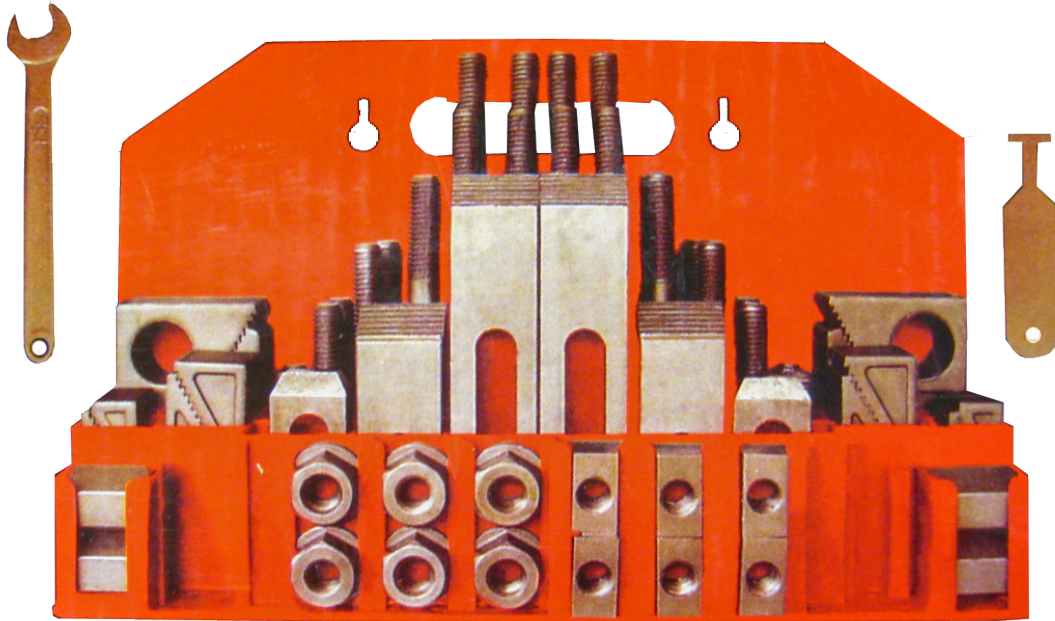
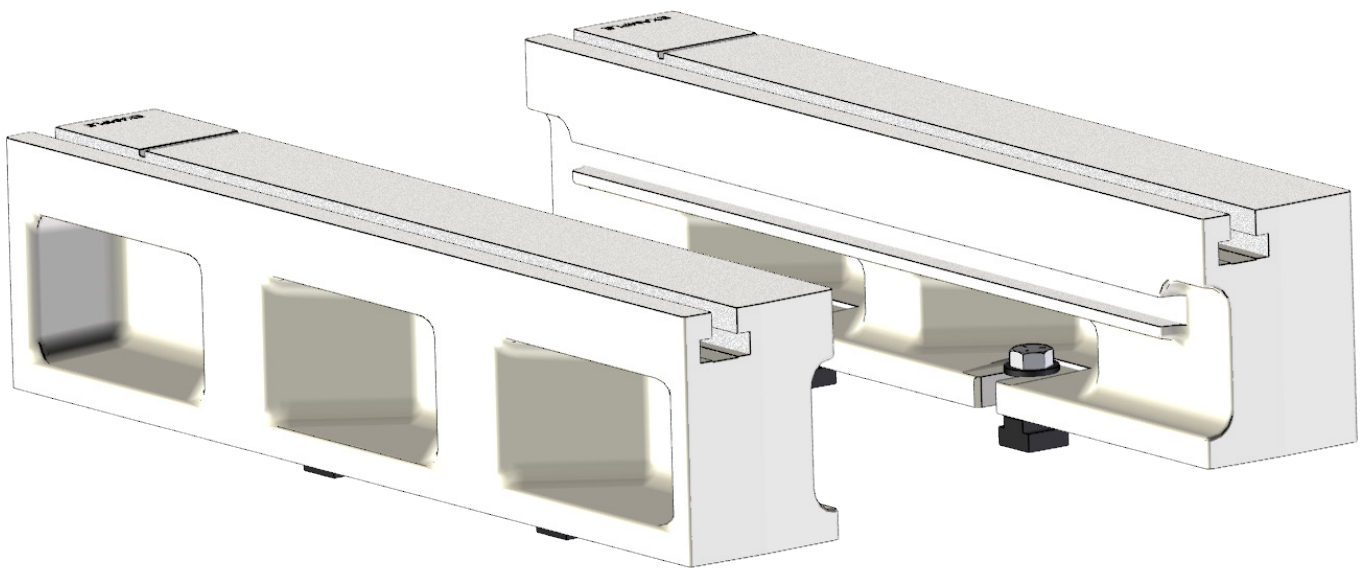
7241P Rottler Economy Head and Block Fixture Assembly

(Includes Clamp Towers - 7242M)



MISCELLANEOUS ACCESSORIES**650-3-37 1/2" (12.7mm) Universal Clamping Kit**

Including T-Nuts, Bolts, Studs, Strap Clamps, etc.

**7219W 5.2" (138.08mm) Heavy Duty T-Slot Universal Parallels**

LOCATOR SETS

For 4th AXIS includes front & rear main locator and rear cam locator

CHEVROLET SETS

650-3-68 Locator Assembly (Small Block Chevy)



650-3-68B Locator Assembly (Big Block Chevy)



650-3-68L Locator Assembly (327 Small Journal Crank)



650-3-68J Locator Assembly (400 Small Block Chevy)



650-3-68G Locator Assembly (Chevy Bowtie Block)



650-3-68F Locator Assembly (Chevy 58mm Cam Bore) for 55mm Cam Journal



650-3-68E Locator Assembly (Chevy 63mm Cam Bore) for 60mm Cam Journal



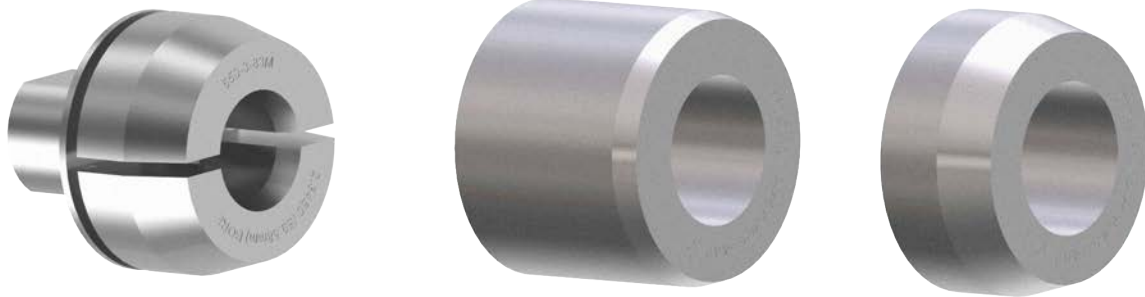
650-3-68M Locator Assembly (Chevy 5.3 liter 99 & Up)



650-3-68R Locator Assembly (Chevy Gen3 LS1 to LS6)



650-3-68T Locator Assembly (Chevy LS7)



FORD SETS

650-3-68A Locator Assembly (Ford 289/302)



650-3-68H Locator Assembly (Ford 351W)



650-3-68P Locator Assembly (Ford 351C)



650-3-68C Locator assembly (Ford 460)

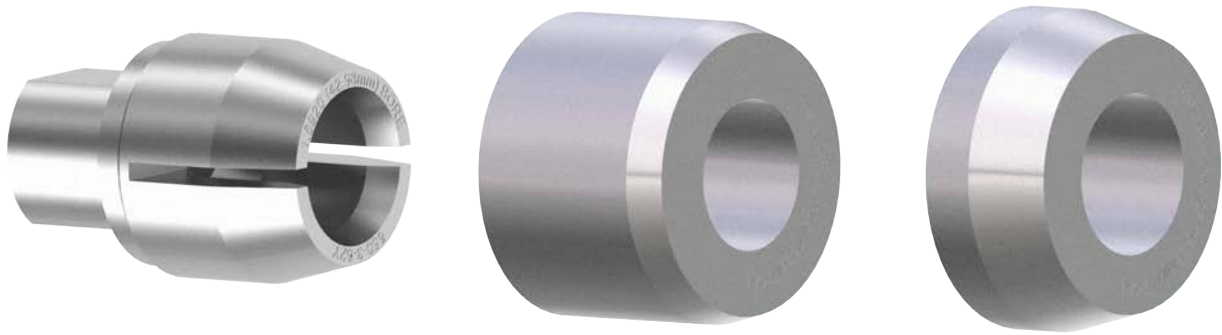


MOPAR SETS

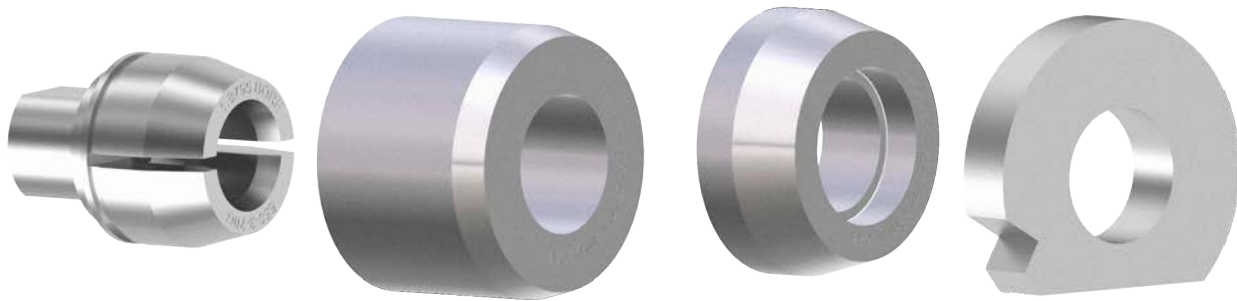
650-3-68K Locator Assembly (Mopar 318)



650-3-68D Locator Assembly (Mopar 360)



650-3-68Q Locator Assembly (Mopar 383,426,440)



MAIN & CAM BEARING LOCATOR ASSEMBLIES

For Rottler 4th Axis Roll Over Fixture. Contact Rottler for Details. If Customer Requires Sizes Other than Available from Stock, Rottler will Manufacture the Required Size.

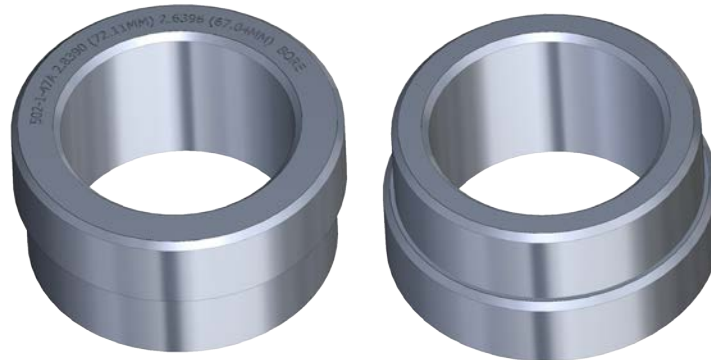
Customer must provide the size, Including tolerance, of the Bore/s the Locator will be Used in. Rottler will use this information to Design the Actual Locator. Sold as Assemblies.

LOCATOR SETS FOR PERFORMANCE FIXTURE

DOMESTIC MAIN LOCATORS

502-1-47A Locator, Main Bearing Chevy V8

(350) Chevy V6 (4.3L) 2.6391" (67.033mm) Chevy V8 (400Sb) Chevy V6 (3.4L) 2.8390" (72.111mm) 1 pair



502-1-47B Locator, Main Bearing Chevy V8

(396/400Bb/454) 2.9365" (74.587mm) Buick V6 (231 Cu. In.) 2.6855" (68.212mm) 1 pair



502-1-47D Locator, Main Bearing Ford V8

(351C) 2.9402" (74681mm) Ford V8 (351W / 429 / 460) 3.1907" (81.044mm) 1 pair



502-1-47E Locator, Main Bearing Ford V8

(289/302) 2.4397" (61.968mm) Mopar V8 (360) 3.0010" (76.225mm) 1 pair



502-1-47F Locator, Main Bearing Mopar V8

(318/340) 2.6910" (68.351mm) Mopar V8 (426 / 440) 2.9410" (74.701mm) 1 pair



502-1-47G Locator, Main Bearing Chevy V8

(283/327 Early) 2.4892" (63.226mm) Chevy V8 (5.3L 1999 & Newer) 2.7490" (69.825mm) Chevy Ls-1 2.7495" (69.825mm) 1 pair



502-1-47C Locator, Main Bearing Buick/Olds/Pontiac V8

(350/389/400) 3.1866" (80.940mm) Buick/Pontiac V8 (421/428/455) 3.4365" (87.287mm) 1 pair



502-1-47K Locator, Main Bearing GM 6.5L/395 Cu. In.

Diesel Application 3.1420" (79.807mm) 1 pair



502-1-47L Locator, Main Bearing Ford

4.6 (2.8491") Ford Zetec 2.4528" (62.301mm) 1 pair



IMPORT MAIN LOCATORS

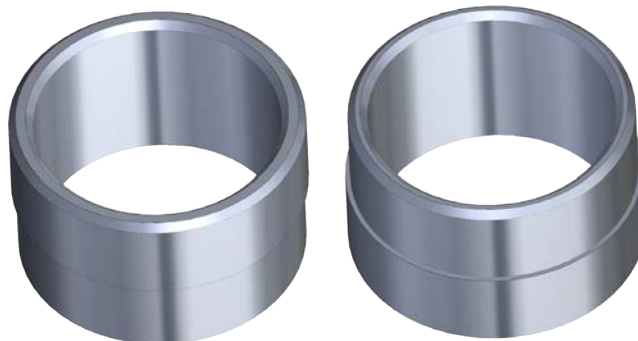
502-1-47J Locator, Main Bearing 928 Porsche

V8 5L Block 2.953" (75.260mm) 1 pair



502-1-47M Locator, Main Bearing Honda

1.8 (2.3216") Mitsubishi 2.0 - 2.4002" (60.965mm) 1 pair



502-1-47Q Locator, Main Bearing Holden V8

2.5906/2.5916" (65.801/65.827mm) 1 pair



502-1-47R Locator, Main Bearing 2.5 Liter Subaru

2.5185/2.5195" (63.970/63996mm) 2.2 Liter Honda 2.1250/2.1260" (53.975/54.00mm) 1 pair



502-1-47P Locator, Main Bearing 7.3 IHC Diesel V8

3.315/3.316" (84.201/84.226mm) 3.0 Toyota V6 2.677/2.678" (67.996/68.021mm) 1 pair



MAIN BEARING LOCATORS FOR 650-3-1 PERFORMANCE FIXTURE

If Customer Requires Sizes Other Than Listed Below, Rottler Will Manufacture the Required Size.

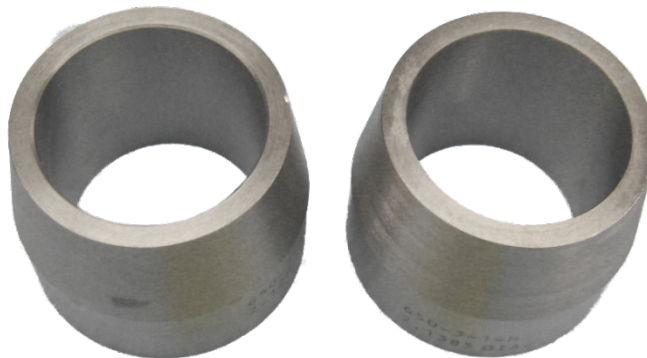
Customer Must Provide the Size, Including Tolerance, of the Bore/s the Locator will be used in. Rottler Will use this Information to Design the Actual Locator. Sold In Pairs.

CAM BEARING LOCATOR SETS FOR PERFORMANCE FIXTURE**CHEVROLET SETS****650-3-19 Locator, Cam Bearing Small Block Chevy**

(283/327/350/400) Bore#1 2.019/2.021" #5 (2.009/2.011)

**650-3-19A Locator, Cam Bearing Big Block Chevy**

(396/427/454) Bore#1 2.1395/2.1405" #5 (2.1295/2.1305)



650-3-19G Locator, Cam Bearing Special Pro Stock Racing Big Block Chevy

63mm Roller Bearing Bore 2.4780/2.4790"



650-3-19H Locator, Cam Bearing Special Pro Stock Racing Big Block Chevy

Bore 2.6733/2.6743"



650-3-19J Locator, Cam Bearing Small Block Chevy Roller Bearing

Bore 1.8745/1.8750"



650-3-19L Locator, Cam Bearing Chevy Bow-Tie Block

Bore 2.1200/2.1210"



650-3-19M Locator, Cam Bearing Chevy 58mm Roller Bearing

Bore 2.2827/2.2831"



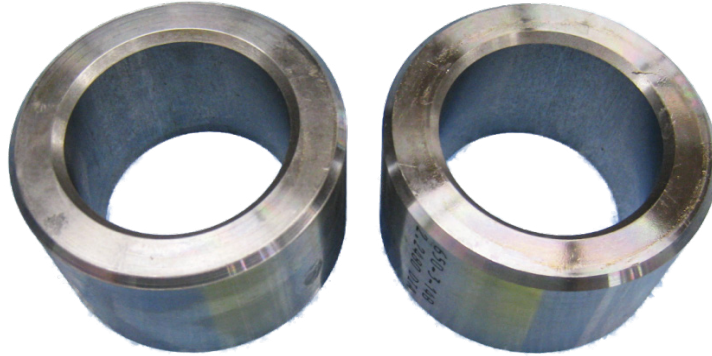
650-3-19N Locator, Cam Bearing Chevy Bow-Tie Block

Bore 1.999/2.0010"



FORD SETS**650-3-19B Locator, Cam Bearing Big Block Ford**

(427/429/460) Bore#1 2.2495/2.2505" - #5 2.2495/2.2505"

**650-3-19C Locator, Cam Bearing Small Block Ford**

(260/289/302/351W) Bore#1 2.2041/2.2051" - #5 2.144/2.145"

**650-3-19D Locator, Cam Bearing Small Block Ford**

(351M) Bore#1 2.2495/2.2505" - #5 2.1440/2.1450"



650-3-19Q Locator, Cam Bearing Big Block Ford

390 Bore#1 2.3095/2.3105" - #5 2.2495/2.2505"



MOPAR SETS

650-3-19E Locator, Cam Bearing Small Block Mopar

(318/340/360) Bore#1 2.1295/2.1305" - #5 1.6920/1.6930"



650-3-19F Locator, Cam Bearing Big Block Mopar

(383/426/440) Bore#1 2.1295/2.1305" - #5 1.8795/1.8805"





MAIN BEARING LOCATORS FOR 650-3-1 PERFORMANCE FIXTURE

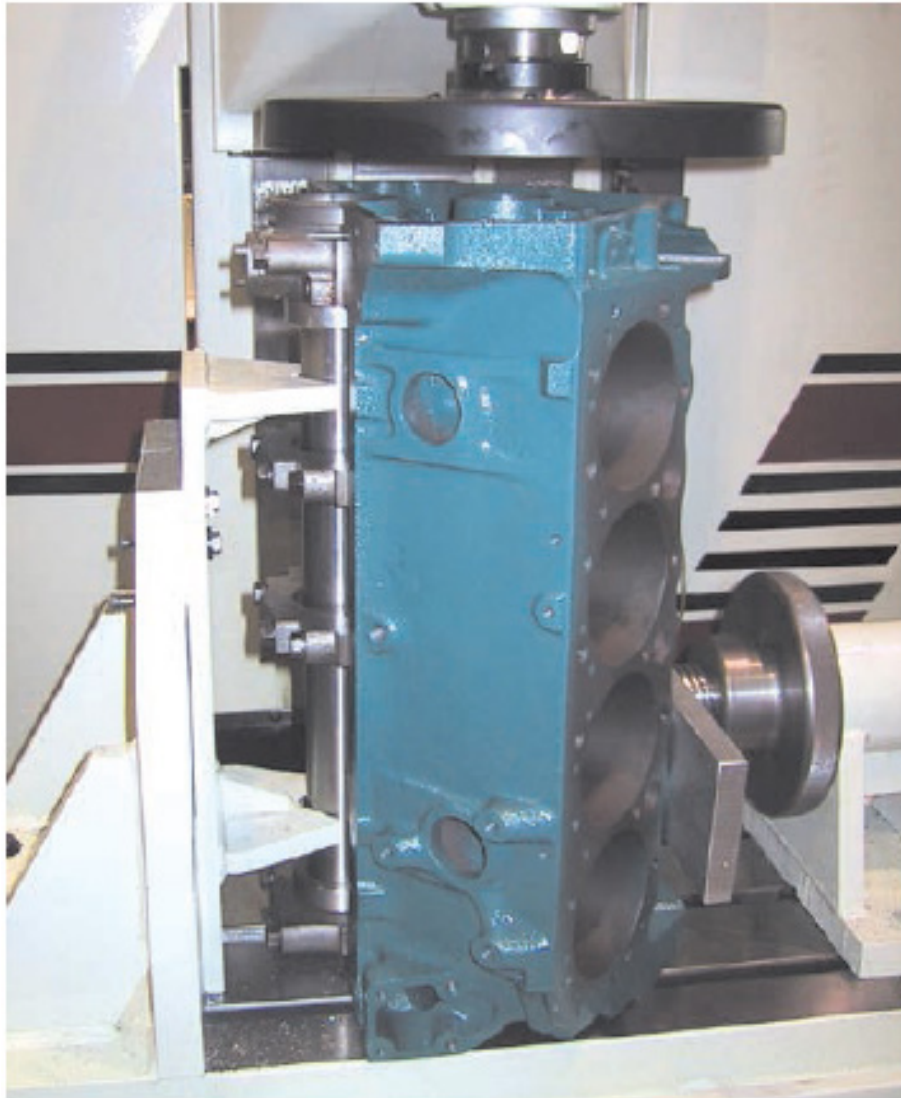
If Customer Requires Sizes Other Than Listed, Rottler Will Manufacture the Required Size.

Customer must provide the Size, Including Tolerance, of the Housing Bore/s the Locator Will be used in. Rottler will use this information to design the actual locator.

Sold In Pairs. Locators are Machined Smaller than Housing Bore.

FIXTURING FOR MACHINE**BLOCK END TRUING****650-3-30 Block End Truing Fixture Assembly**

(Requires Performance Fixture Part #650-3-1) Used for Surfacing and Machining Front and Rear End of Block True to Crankshaft Centerline.



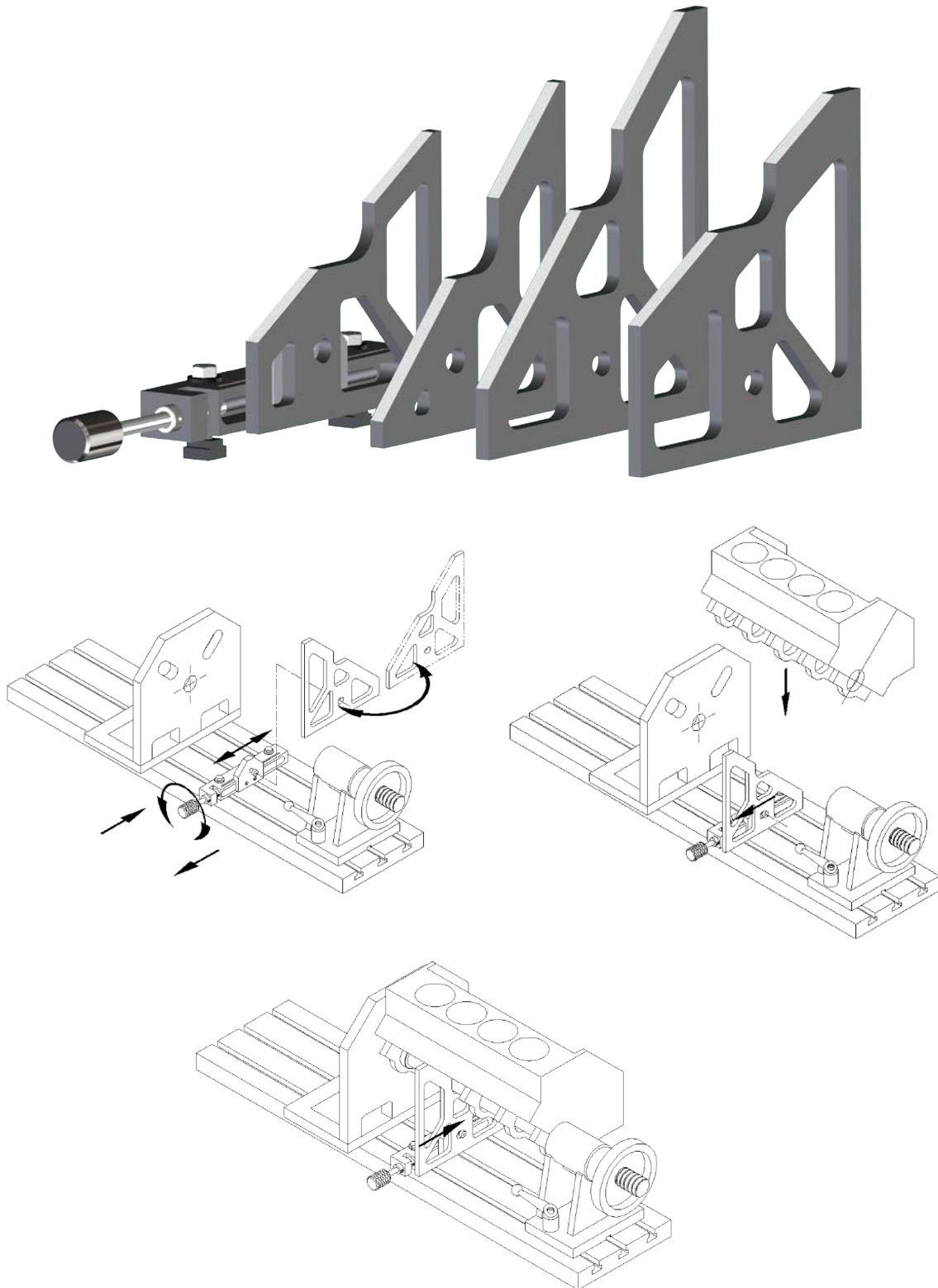
650-3-30A Block End Truing Fixture Assembly

(Requires 4th Axis Fixture #650-3-59) Used for Surfacing and Machining Front and Rear End of Block True to Crankshaft Centerline.



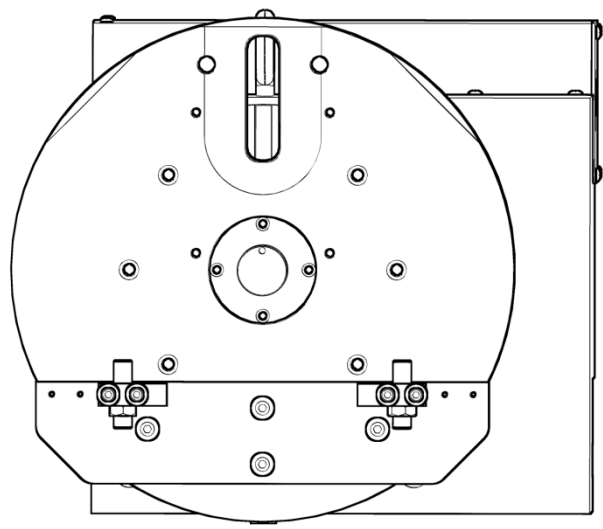
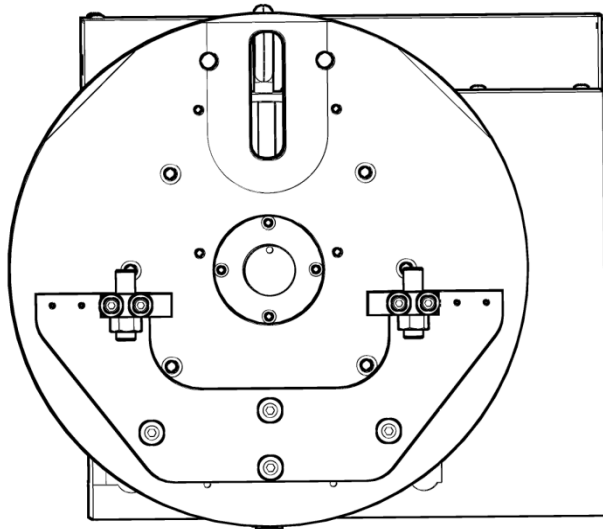
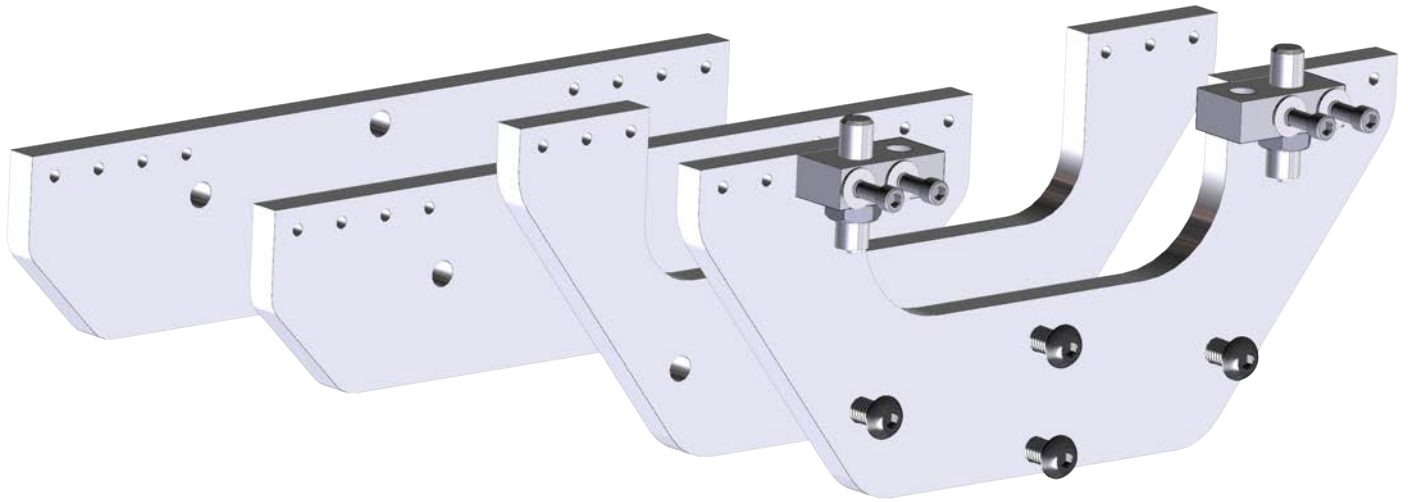
OVERHEAD CAM BLOCK FIXTURING**650-3-20A Pan Rail Wedge Fixture**

(Requires Performance Fixture Part #650-3-1). Used for Fixturing 60 & 90-Degree Overhead CAM Blocks



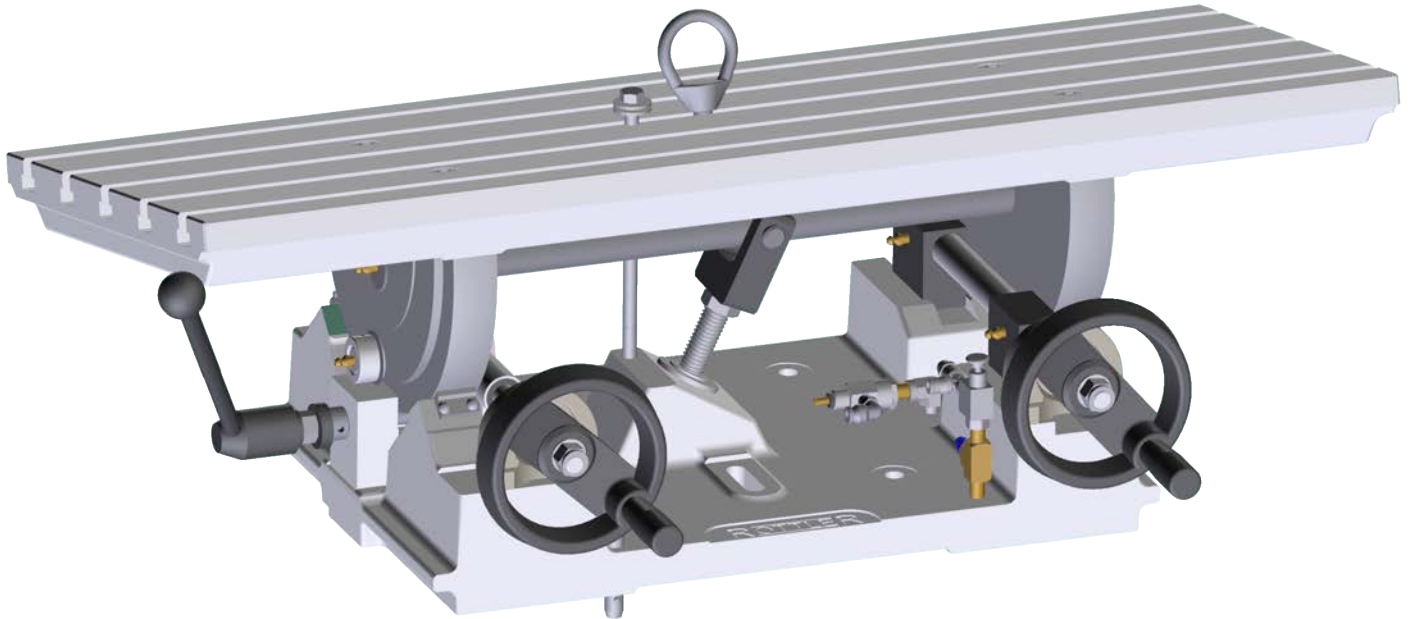
650-3-84 Overhead Cam Block Fixture

For V Blocks for 4th Axis Fixture (650-3-59)

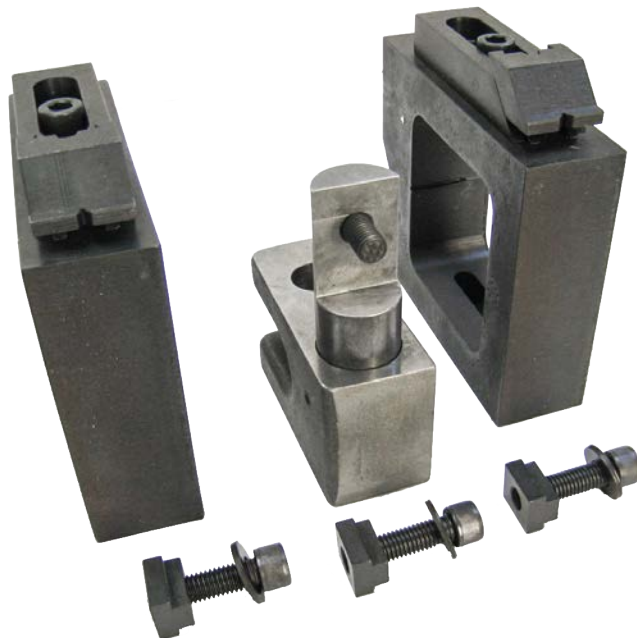


CYLINDER HEAD SURFACING FIXTURE**7209M Leveling Table with Air Float**

Complete with Universal Work Holding System for Surfacing Cylinder Heads and Small In-Line Blocks

**7226G Exhaust and Intake Manifold Surfacing Fixture System**

For #7209M Table

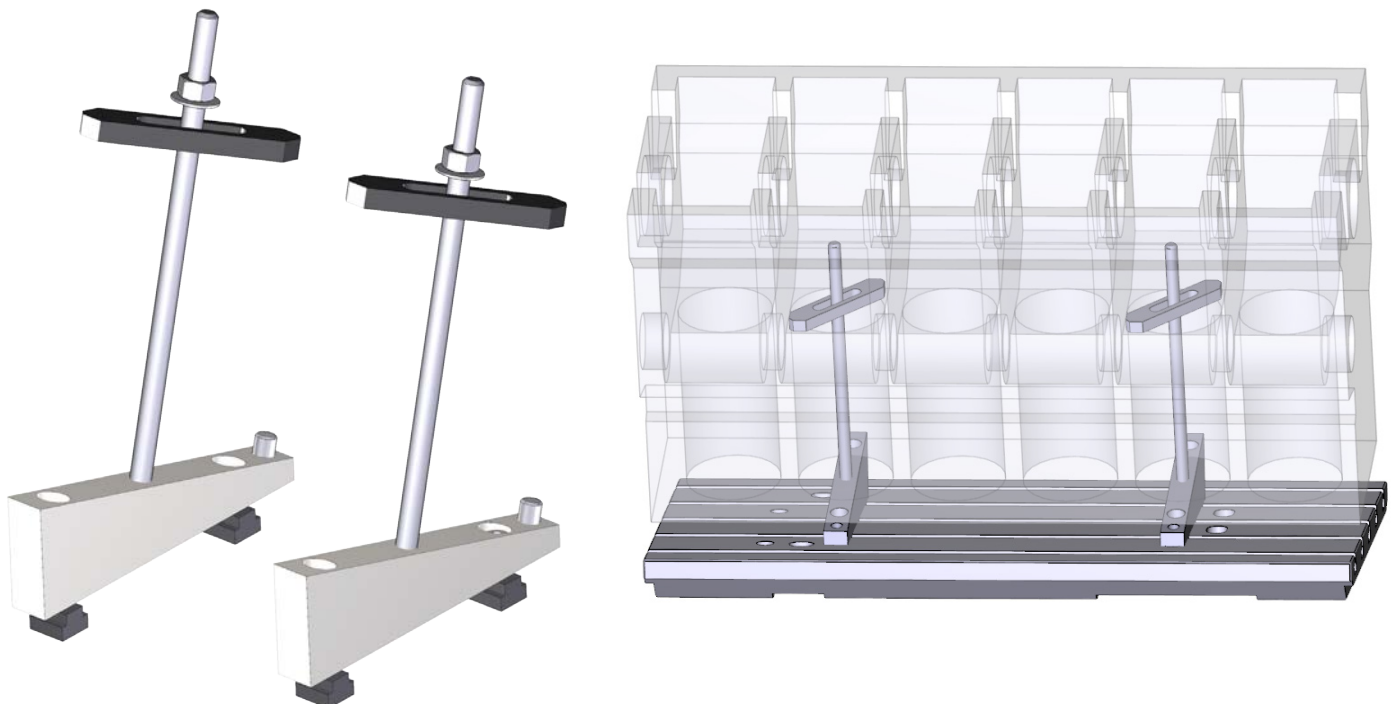


BLOCK MAIN LINE BORING AND CAM BORING FIXTURES**650-3-1A Lower End Machining Package Assembly**

(Requires Performance Fixture Part # 650-3-1) Used for Set Up for Main Line Boring and Angle Adjustment for Splayed Cap Drilling and Tapping."

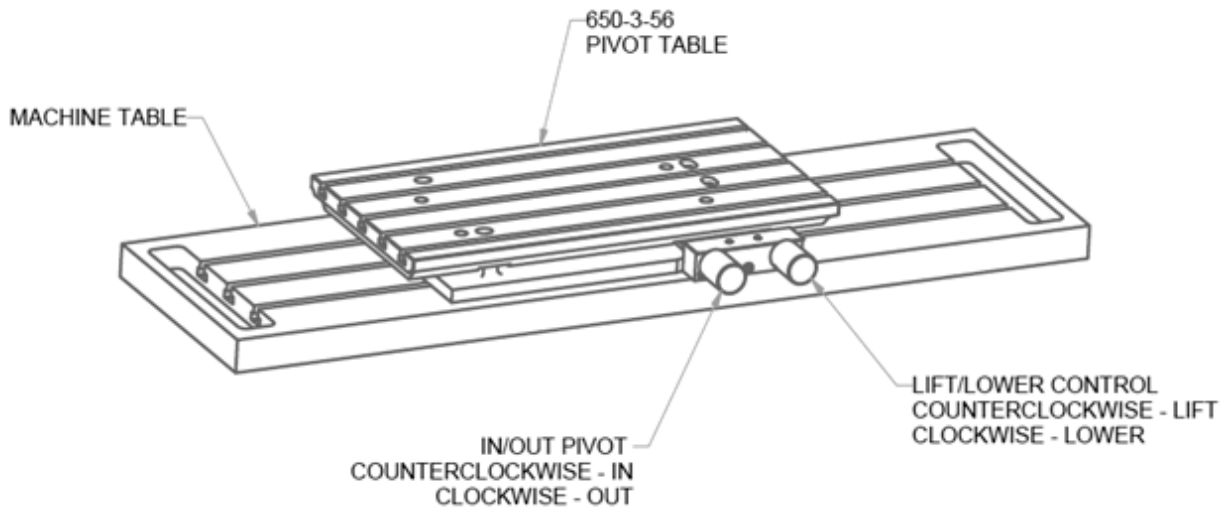
**6866 Cummins Wedge for Camshaft Line Boring**

Requires 650-3-56 Pivot Table



650-3-56 Line Bore Pivot Table

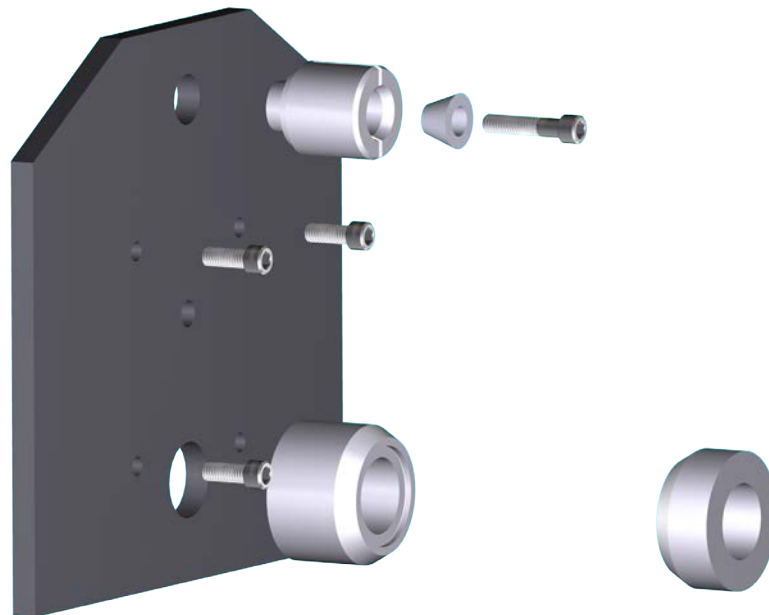
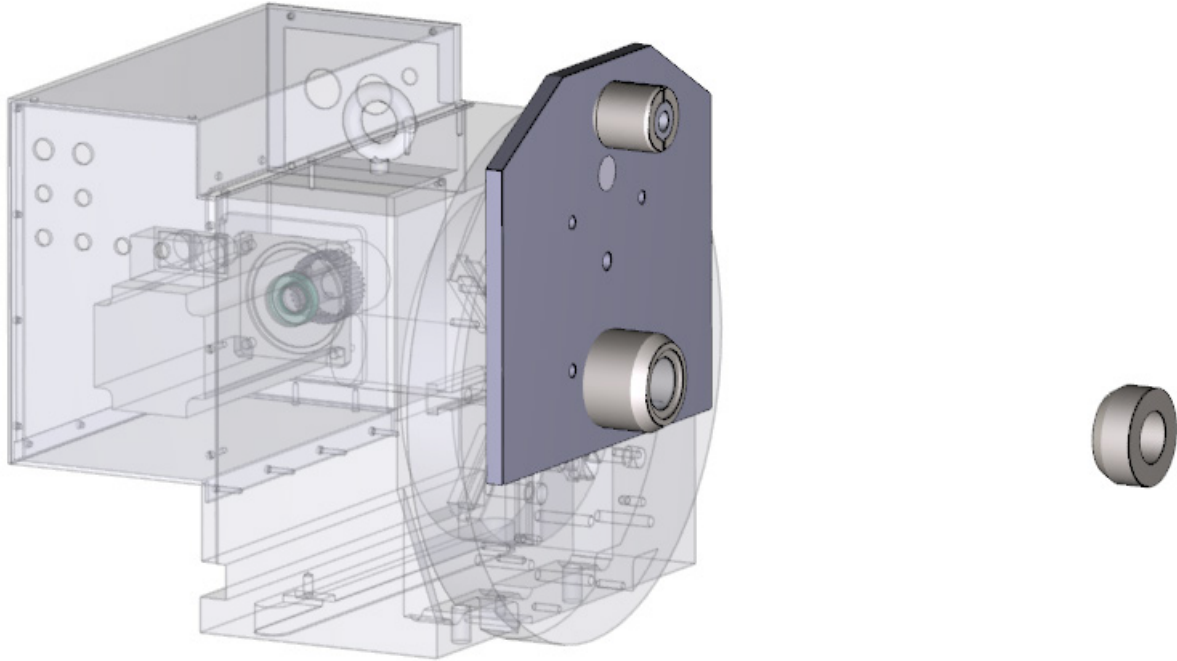
Complete with Universal Work Hold System for Small In Line and 90 Degree V Blocks, used for Main Line Boring and Stroker Crank Clearance.



SPECIAL APPLICATION FIXTURE

650-3-82 Mopar 5.7L Hemi Fixture Assembly

(Requires 4th Axis Fixture 650-3-59)



CYLINDER BORING TOOLING

BORING/SLEEVEING/CHAMFERING/O-RING TOOLING

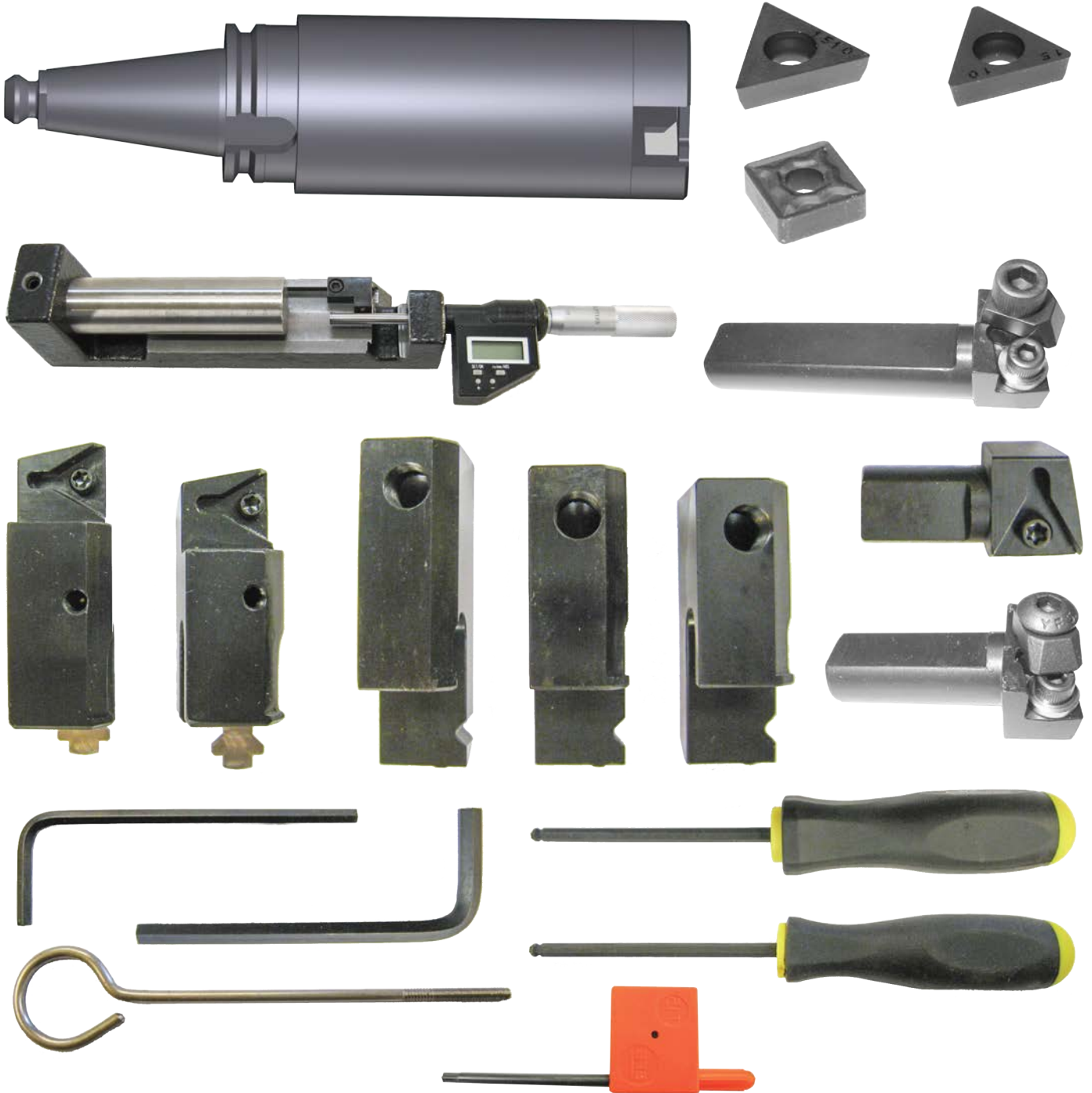
650-2-1D Cutterhead Package

2.0 - 4.0" (50.80 - 101.60mm) Diameter X 7.0" (177.80mm) Length Complete with Tooling and Digital Micrometer



650-2-14B Cutterhead Package

2.9 - 5.0" (73.66 - 127.00mm) Diameter X 7.0" (177.80mm) Length Complete with Tooling and Digital Micrometer



650-2-14F Cutterhead Assembly

2.9 - 5.0" (73.66 - 127.00mm) Diameter X 10.0" (254mm) Length Complete with Tooling and Digital Micrometer





Extender for 650-2-14B&F Cutterhead Assembly

650-2-16D 1.400" (35.5mm) Spacer

(Extension) for 650-2-14B&F Cutterheads



MISCELLANEOUS TOOLING FOR 650-2-14B&F CUTTERHEADS

<p>501-29-6K PCD Tipped Triangular Insert For Boring/Counterboring Aluminum Only - Ideal for Finishing Boring and Counterboring of Aluminum/Alusil Blocks in Preparation for a Sleeve.</p> 	<p>6513P Toolbit, Brazed Carbide .085" Wide O Ring Grooving</p> 
<p>6598M Cartridge Triangular, Positive Rake, 13/16 Shank Length, for Counter Boring</p> 	<p>6513Q Toolbit, Brazed Carbide .120" Wide O Ring Grooving</p> 
<p>6513J Toolbit, Brazed Carbide .037" Wide O Ring Grooving</p> 	<p>6747K Cartridge Assembly 5 Degree Chamfer for Triangular Positive Rake Inserts</p> 
<p>6513L Toolbit, Brazed Carbide .039" Wide O Ring Grooving</p> 	<p>6747P Cartridge Assembly 10 Degree Chamfer for Triangular Positive Rake Inserts</p> 
<p>6513N Toolbit, Brazed Carbide .060" Wide O Ring Grooving</p> 	<p>6747G Cartridge Assembly 15 Degree Chamfer for Triangular Positive Rake Inserts</p> 

6747F Cartridge Assembly

20 Degree Chamfer for Triangular Positive Rake Inserts



6593N Cartridge Assembly

Offset Indexable Insert, Triangular Positive Rake (3.90 - 4.40" Diameter)



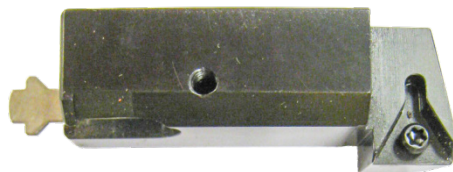
6747M Cartridge Assembly

20 Degree Chamfer for Triangular Positive Rake Inserts (Special Application Only)



6593P Cartridge Assembly

Offset Indexable Insert, Triangular Positive Rake (4.40 - 4.90" Diameter)



6747H Cartridge Assembly

30 Degree Chamfer for Triangular Positive Rake Inserts



RT211 Insert

Triangular 1/4" (6.35mm) 1/64" (.397mm) radius, 1/4" triangular Insert holders only, general purpose and sleeving



6593L Cartridge Assembly

Offset Indexable Insert, Triangular Positive Rake (3.14 - 3.40" Diameter)



RT212 Insert

Triangular 1/4" (6.35mm) 1/32" (.787mm) radius, 1/4" triangular Insert holders only, general purpose and sleeving



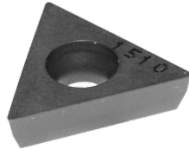
6593M Cartridge Assembly

Offset Indexable Insert, Triangular Positive Rake (3.40 - 3.90" Diameter)



RT321 Insert

Triangular positive rake, 3/8" (9.525mm) 1/64" (.397mm) radius, general purpose and sleeving



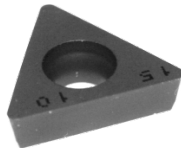
RT322F Insert

Triangular positive rake, 3/8" 1/32" Radius, Precision Counterboring



RT322 Insert

Triangular positive rake, 3/8" (9.525mm) 1/32" (.787mm) radius, general purpose and sleeving



RS322 Insert

Square negative rake, 1/32" (.787mm) radius, 3/8" (9.525mm) IC, black ceramic coated for high speed oversize through boring



RT321F Insert

Triangular positive rake, 3/8" 1/64" Radius, Precision Counterboring



SURFACING TOOLING**650-2-8E Surfacing Cutterhead**






Flycutter, 10" (254mm) Diameter Including (2) Radially and Axially Adjustable 3/8" (9.525mm) IC Insert Holders. Inserts must be ordered separately



650-2-8F Surfacing Cutterhead

Flycutter, 14" (356mm) Diameter Including (2) Radially and Axially Adjustable 3/8" (9.525mm) IC Insert Holders. Inserts must be ordered separately



<p>6303B CBN Insert Round, Double-Sided, 3/8" (9.525mm) IC, for Cutting Cast Iron</p> 	<p>6303S CBN Insert Round, 3/8" (9.525mm) IC, for Cutting Aluminum Blocks with Liners</p> 
<p>6303M PCD Insert Round, 3/8" (9.525mm) IC, for Cutting Aluminum</p> 	<p>6303U CBN Round Insert Single Sided, 3/8" IC. For hard cast iron</p> 
<p>6303K Coated Carbide Insert Round, 3/8" (9.525mm) IC, for General Purpose Use</p> 	

LIFTER BORE TOOLING

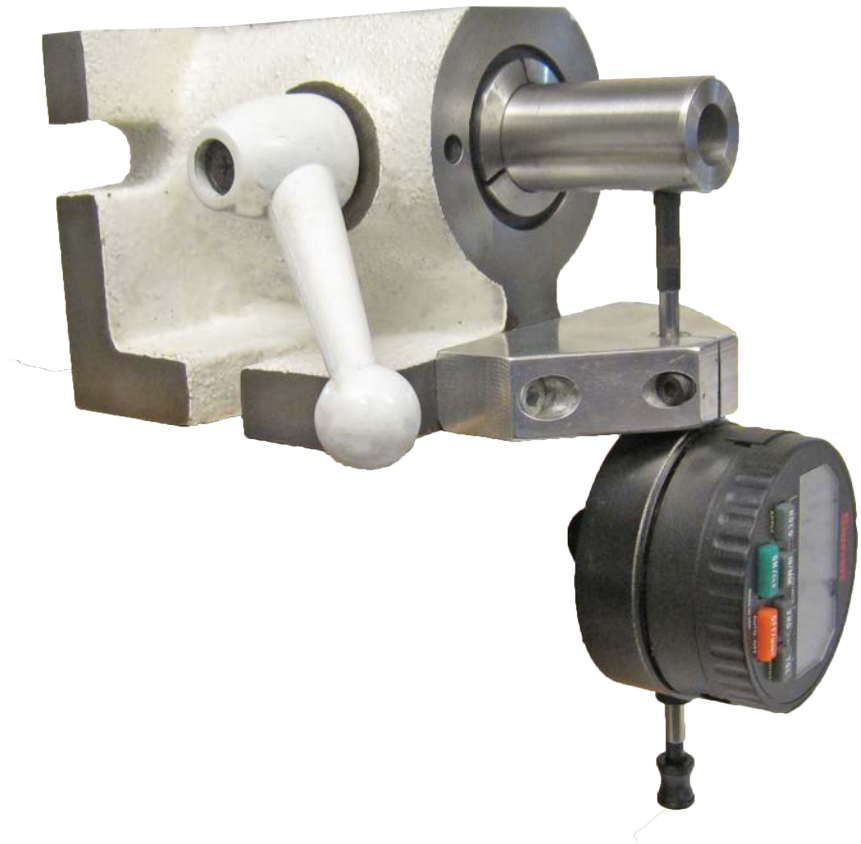
650-2-60B Lifter Bore Tooling Kit

Utilizing Micro Adjustable Boring Bars from .750 - 1.218" (19.05 - 30.93mm)



650-2-60N Setting Fixture

For 650-2-60B Lifter Tooling Package



650-2-60G Insert for 0.750 - 0.900 diameter cartridge









650-2-60H Insert for 0.920 - 1.180 diameter cartridge



SPACERS REQUIRED FOR THE PERFORMANCE FIXTURE #650-3-1

To Set V Blocks at the Correct Angle for Lifter Boring Machine Work

<p>650-3-7E 4-Degree Cam Bar Spacer-Chevy Small Block Only</p> 	<p>650-3-7H Spacer, Cam Bar 4-Degree Ford 429/400</p> 
<p>650-3-7F 6.25 Degree Cam Bar Spacer-Chevy Big Block Only</p> 	<p>650-3-7J Spacer Cam Bar 48-Degree Mopar Small Block (Race)</p> 
<p>650-3-7G Spacer, Cam Bar 3.5 Degree Ford 289/302/351W</p> 	<p>650-3-7N Spacer, Cam Bar 42-Degree Chevy Aurora</p> 

650-3-7P Spacer, Cam Bar 43-Degree Chevy Aurora



650-3-7Q Spacer, Cam Bar 44-Degree Chevy Aurora



650-3-7S Spacer, Cam Bar 44-Degree Chevy Small Block



650-3-7T Spacer, Cam Bar 48-Degree Chrysler Big Block



MAIN LINE BORE TOOLING**6753Q Main Line Bore 90 Degree Right Angle Drive Assembly**

Diameter 1.9 - 5.6" (48 - 142.2mm) Minimum clearance 3.29" (83.6mm) with 650-2-39B Cutterhead, Includes 5 extensions spacers.



650-2-38G Special Belt Drive 90 Degree Right Angle Drive Assembly

For Limited Clearance Between Bearing Caps, Diameter 1.9 - 4.0" (48 - 101.6mm) Minimum clearance 2.7" (69mm) with 650-2-39B Cutterhead, includes 5 extension spacers



650-2-19M Narrow Right Angle Drive 1.9 - 2.4" (48 - 60.9mm)

Note: Cutterheads are not included with right angle drive and must be ordered separately

Note: The Belt Drive Right Angle Drive is Designed for Limited Clearance Between Bearing Caps and It's Cutting Performance Will Deteriorate as Larger Diameters are Bored and Extension Spacers are Used.

Note: Length of Bores can be Increased with Extension Spacers. The Addition of Extension Spacers Will Increase The Minimum Distance Between Bearing Housings by the Length of the Spacer. Allow for some Clearance either side of the Assembly for Safety While

Rottler Right Angle Drive Line Bore System will not be able to Line Bore Blocks that have Castings Between the Main Bearing Caps Found in Some New Design Light Weight Blocks.



650-2-39B Cutterhead Assembly Line Boring

1.9 - 4.0" (48.26 - 101.60mm) Diameter Complete with Tooling and Digital Micrometer. (When used with 11103 Drive, minimum distance between Bearing Housings 3.29") (83.6mm)



650-2-39C Cutterhead Assembly Line Boring

2.9 - 5.6" (73.66 - 142.24mm) Diameter Complete with Tooling and Digital Micrometer. When used with 11103 Drive, minimum distance between Bearing Housings 4.07" (103.4mm)



SPECIAL MAIN LINE BORING THRUST FACING TOOL

<p>6801M Toolholder Indexable Insert, Thrust Facing .160 IC, Positive Rake</p> 	<p>6801P Toolholder Indexable Insert, Thrust Facing 350 Chevy and Other Small Blocks Line Boring</p> 
<p>501-29-6G Insert Triangular, .160 IC 1/64" (.397mm) Radius</p> 	<p>501-29-6H Insert Screw</p> 

SPECIAL MAIN LINE BORING CHAMFERING TOOL

<p>199-90 Toolholder 2 - 3" (50.80 - 76.20mm)</p> 	<p>199-96 Toolholder 3 - 4" (76.20 - 101.60mm)</p> 
<p>501-33E Toolbit 45-Degree Chamfer</p> 	

CAM LINE BORING TOOLING

650-3-43T Cam Line Bore Tooling Package

(Requires 650-3-30 Block End Truing Fixture, 650-3-1 Performance Fixture and 6753Q Right Angle Drive Assembly)
Customer Must Order Cam Line Bar Bushings and Cam Bearing Locators to Suit Diameter to be Line Bored.



CAM LINE BAR BUSHINGS

If Customer Requires Sizes Other than Listed Below, Rottler will Manufacture the Required Size. Customer Must Provide the Size, Including Tolerance of the Housing Bore/s the Bushing will be used in. Rottler will use this Information to Design the Actual Bushing. Sold in Pairs. Bushings are Machined Smaller than Housing Bore.

650-3-43B Bushing - 63mm (2.480" +/- .0007)

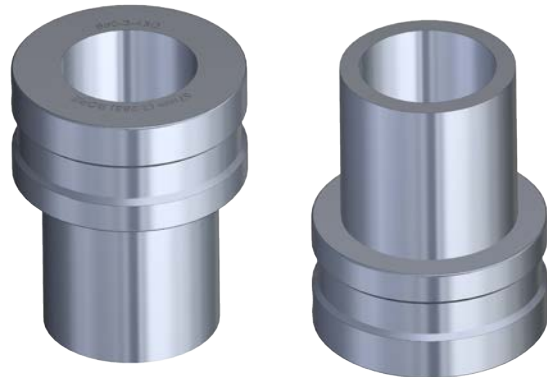
(Sold in pairs)

**650-3-43C Bushing - 58mm (2.282" +/- .0007)**

(Sold in pairs)

**650-3-43D Bushing - (2.250" +/- .0007)**

(Sold in pairs)



650-3-43E Bushing - (2.790" +/- .0007)
(Sold in pairs)



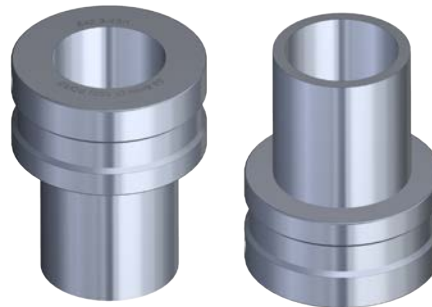
650-3-43F Bushing - (2.309" +/- .0007)
(Sold in pairs)



650-3-43G Bushing - (2.500" +/- .0007)
(Sold in pairs)



650-3-43H Bushing - (2.120" +/- .0007)
(Sold in pairs)

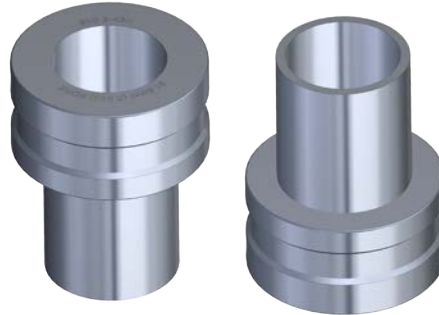


650-3-43J Bushing - (2.030" +/- .0007)
(Sold in pairs)



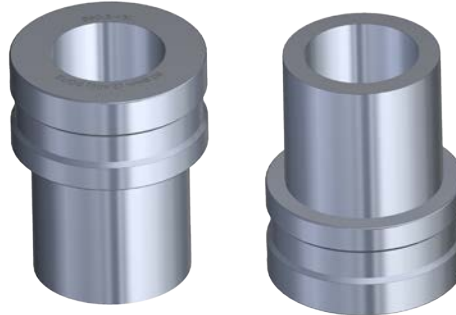
650-3-43K Bushing - (2.040" +/- .0015)

(Sold in pairs)



650-3-43L Bushing - (2.400" +/- .0007)

(Sold in pairs)



650-3-43M Bushing - (2.125" +/- .0007)

(Sold in pairs)



650-3-43N Bushing - (2.150" +/- .0007)

(Sold in pairs)



650-3-43P Bushing - (2.300" +/- .0007)

(Sold in pairs)



650-3-43Q Bushing - (2.060" +/- .0007)

(Sold in pairs)



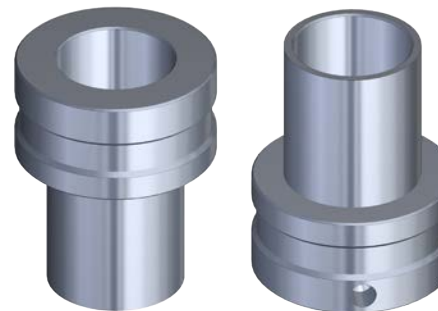
650-3-43R Bushing - (2.6733" +/- .0007)

(Sold in pairs)



650-3-43S Bushing - (2.0450 +/- .0007)

(Sold in pairs)



THREAD TAPPING TOOLING

650-2-11K Quick Change Tap Holder Cartridge Assembly with Adaptor



650-2-11C Torque Control Tap Holder for 1/4" (6.35mm) taps



650-2-11D Torque Control Tap Holder for 5/16" (7.95mm) taps



650-2-11E Torque Control Tap Holder for 3/8" (9.525mm) taps



650-2-11F Torque Control Tap Holder for 7/16" (11.13mm) taps



650-2-11G Torque Control Tap Holder for 1/2" (12.70mm) taps



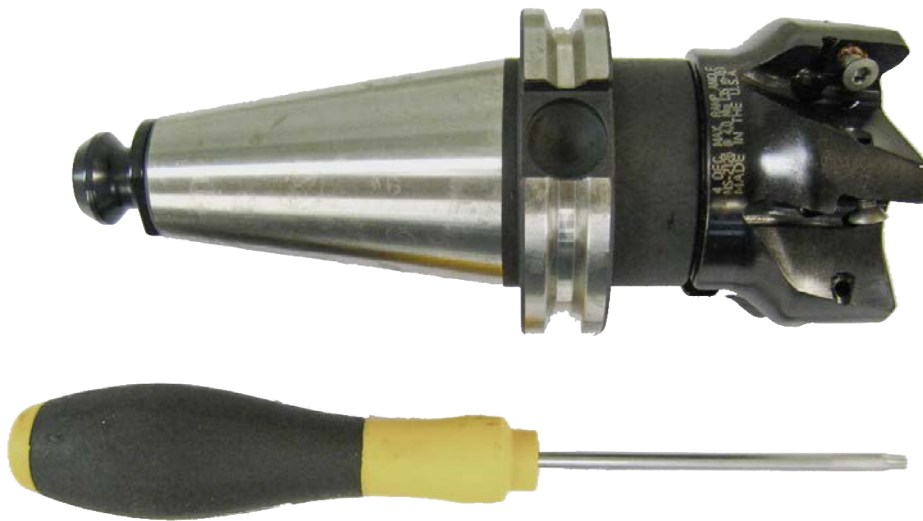
DRILL TOOLING

650-2-44M Precision Drill Chuck Assembly



SHELL MILL ASSEMBLIES

650-2-44N 2 1/2" (63.50mm) Shell Mill Assembly



650-2-44P 4" (101.60mm) Shell Mill Assembly



GAGES AND INDICATORS

650-3-38 Level-Intake and Exhaust Manifolds



7152A Dual Axis Level Assembly



650-2-44Q Three Dimensional Electronic Position Finder

With Spindle Adaptor and Retention Knob



502-9-9A Mechanical Run Out Indicator

General Purpose (.001 Resolution)



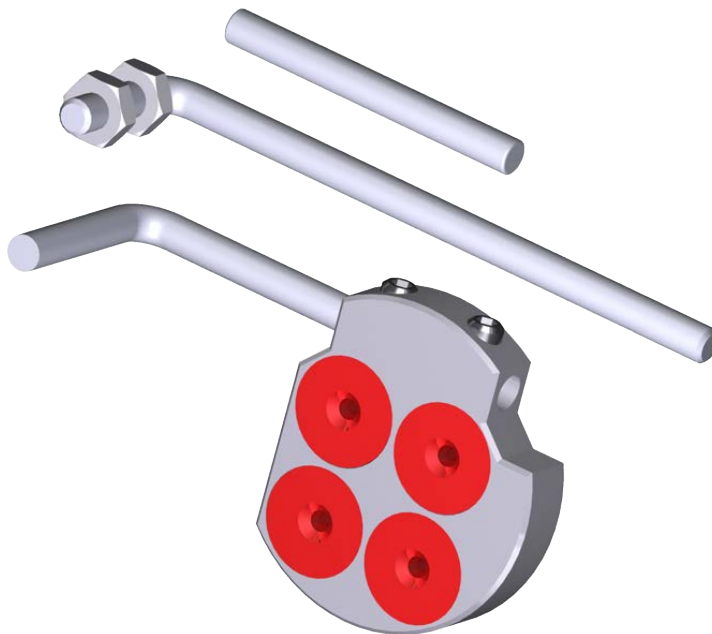
502-11-39D Mechanical Run Out Indicator

For Precision Bore Adjustment (.0001 Resolution)



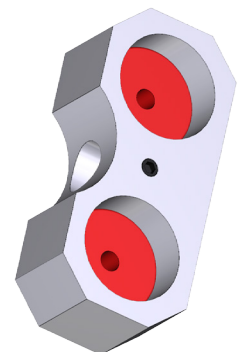
502-12-4 Magnetic Base

Including (2) Extension Arms for Indicators (for centering cylinder bores) requires 502-9-9A



502-12-4A Magnetic Indicator Holder Assembly

For centering on main bores for line boring. (Requires 502-9-9A Mechanical Runout Indicator)



MISCELLANEOUS ACCESSORIES**650-2-45H roughing end mill**

1" (25.4mm) diameter X 8 1/2" (216mm) long for block stroker clearance

**650-2-44A End Mill Adapter**

1" (25.4mm) Complete with 650-2-44L Retention Knob CAT 40 Taper



7242M Clamp Tower Assembly

(1 Pair)



BLOCK LIGHTENING TOOLING PACKAGES

650-2-44W Block Lightening Tooling Package

For Dart Small Block Chevy

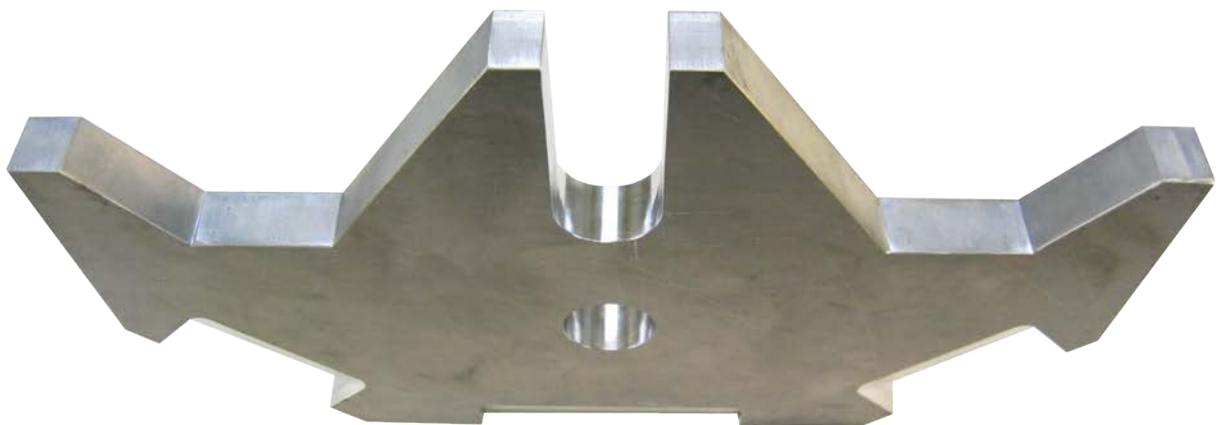


650-2-44X Block Lightening Tooling Package

For World Products Small Block Chevy



650-2-45J Block Lightening Tooling Package (CAT40 Taper) for Big Block Chevy



650-2-45Q Big Block Main Cap Lightening Fixture Assembly with Tooling

